TECHNICAL SUPPORT DOCUMENT

TEXAS STATE IMPLEMENTATION PLAN (SIP)

REVISIONS:

1.) Non-Road Large Spark-Ignition Engines

2.) Accelerated Purchase of Tier2/Tier3 Non-Road Compressed-Ignition Equipment

3.) Non-Road Construction Equipment Restrictions

4.) Electrification of Airport Ground Support Equipment

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Technical Support Document (TSD)

State of Texas

State Implementation Plan Revisions

for

Four Rules pertaining to the Dallas/Ft. Worth (DFW)

Attainment Demonstration

1.) Non-Road Large Spark-Ignition Engines;

2.) Accelerated Purchase of Tier2/Tier3 Non Road Compression-Ignition Equipment;

3.) Non-Road Construction Equipment Restriction; and,

4.) Electrification of Airport Ground Support Equipment

Background

The DFW ozone nonattainment area, an area defined by Collin, Dallas, Denton, and Tarrant Counties, was originally designated "moderate" under the FCAA Amendments of 1990 (42 USC) and thus was required to attain the one-hour national ambient air quality standard (NAAQS) for ozone by November 15, 1996. As required by the FCAA, the state submitted an attainment demonstration plan in 1994 which projected attainment of the ozone NAAQS by 1996. This plan was based on a volatile organic compound (VOC) reduction strategy. DFW did not attain the ozone NAAQS in 1996. The United States Environmental Protection Agency (EPA) is authorized to redesignate an area to the next higher classification ("bump up") if the area fails to attain by the required date. In March 1998, in accordance with 42 USC, §7511(b)(2), the EPA reclassified the DFW area from moderate to serious, based on monitored exceedances of the ozone NAAQS between 1994 and 1996. The reclassification required the state to submit a revised SIP that demonstrates that the ozone NAAQS will be met in the DFW area by November 15, 1999. The rules

adopted by Texas for DFW addressed in this TSD are one element of the ozone attainment demonstration SIP for the DFW area

Texas has relied upon EPA's 1998 Transport Policy to show that emissions from the Houston/Galveston Severe ozone nonattainment area are affecting the DFW area. Therefore, Texas is requesting an extension of the attainment date for the DFW area to the same date as Houston - November 15, 2007. The attainment demonstration modeling shows that, in order for DFW to achieve the ozone NAAQS as expeditiously as practicable, but no later than 2007, NO_x reductions are necessary from certain emission source categories, including reductions in central and east Texas counties surrounding the DFW nonattainment area. Therefore, each strategy, including the reductions required by Texas and the subject of this rulemaking, is crucial for the DFW nonattainment area to demonstrate attainment.

Criteria for Evaluation

The four Texas regulations addressed here were reviewed

and evaluated in conformance with Section 110 (State Implementation Plans), Section 209 (State Standards) and Section 213 (Non-Road Engines and Vehicles) of the Clean Air Act, as amended in 1990.

Technical Review

1.) Non-Road Large Spark-Ignition (LSI) Engines;

30 TAC Chapter 114: §114.420 (Definitions), §114.421 (Emission Specifications), §114.422 (Control Requirements), §114.427 (Exemptions), and §114.429 (Affected Counties and Compliance Schedules). Texas Rule Log Number 1999-055G-114-AI.

Texas developed a non-road LSI engine strategy in the DFW area for non-road, LSI engines 25 horsepower (hp) and larger for model year 2004 and subsequent engines, and all equipment and vehicles that use such engines. The strategy requires LSI engines to meet emission limits equivalent to, and be certified exactly as they are, under 13 California Code of Regulations 9.

Although emissions from non-road, LSI engines have not yet been regulated by EPA, under section 209(e)(2) of the Clean Air Act, the California Air Resources Board (CARB) has adopted exhaust emission standards for these engines. Non-road, LSI engines are primarily used to power industrial equipment such as forklifts, generators, pumps, compressors, aerial lifts, sweepers, and large lawn tractors. The engines are similar to automotive engines and can use similar automotive technology, such as closed-loop engine control and three-way catalysts, to reduce emissions.

The CARB has determined these standards to be a technologically feasible and cost effective strategy for reducing NO_x and VOC from these engines. NO_x and VOC are precursor chemicals that contribute to the production of ground-level ozone. Adopting the California standards for non-road, LSI engines in the four county DFW nonattainment area and surrounding 5 counties will reduce the amount of NO_x and VOC emissions from these sources, and therefore, help reduce ground-level ozone in the nonattainment area. Emission reductions of NO_x from these affected engines are projected to be 2.2 tons per day and EPA agrees

with this projected emission reductions credit. The program is estimated to cost about $500 per ton of NO_x reduced, which compares very favorably with the cost per ton of other emission control strategies.

The Texas rule, consistent with the California rule, exempts construction and farm equipment engines below 175 hp; marine propulsion engines; engines used in devices that operate on foundations for more than one year, operate on rails or operate on tracks; recreational vehicles and snowmobiles, and power-generating gas turbines. Section 209(e)(1) of the Clean Air Act specifically prohibits state standards on non-road engines subject to regulation, new locomotive engines and new engines used in construction equipment or farm equipment. Section 209(e)(2)(A) authorizes EPA to approve California regulation of non-road engines other than those used in locomotives, construction and farm equipment. Section 209(e)(2)(B) allows another state to adopt requirements for non-road engines if such regulations are identical to California's and if California and the particular State adopt the regulations at least 2 years prior to the effective date. EPA has promulgated regulations, codified at 40

CFR section 85.1606, setting for the criteria for adoption of California regulations regarding non-road vehicles and non-road engines. The exemptions contained in Texas' rule make it identical to the California regulation, thus satisfying the statutory and regulatory criteria. Further, the implementation dates of the California regulation and the Texas rule satisfy the 2 year lead time requirement of the Clean Air Act and 40 CFR sections 85.1606(d) and 85.1606(e).

The rule applies to Collin, Dallas, Denton, Tarrant, Ellis, Johnson, Kaufman, Parker, and Rockwall counties.

2.) Accelerated Purchase of Tier2/Tier3 Non Road Compression-Ignition Equipment;

30 TAC Chapter 114: §114.410 (Definitions), §114.412 (Control Requirements), §114.416 (Reporting and Recordkeeping Requirements), §114.417 (Exemptions), and §114.419 (Affected Counties). Texas Rule Log Book 1999-055H-114-AI.

Non-road diesel engines, also referred to as non-road compression-ignition engines, dominate the large non-

road engine market. Examples of non-road equipment that use diesel engines include: agricultural equipment such as tractors, balers, and combines; construction equipment such as backhoes, graders, and bulldozers; general industrial equipment such as concrete/industrial saws, crushing equipment, and scrubber/sweepers; some lawn and garden equipment such as garden tractors, rear engine mowers, and chipper/grinders; material handling equipment such as heavy forklifts; and utility equipment such as generators, compressors, and pumps.

On October 23, 1998 EPA adopted more stringent emission standards for NO_x, VOC's, and particulate matter (PM) for new non-road, compression-ignition engines, to be phased in over several years beginning in model year 1999. See, 63 Federal Register 56968 (October 23, 1998), codified at 40 CFR part 89. Engines used in underground mining equipment, locomotives, and marine vessels over 50 hp are not regulated by this 1998 federal rule. This comprehensive new program phases in more stringent Tier 2 standards for all engine sizes from the model years 2001 to 2006, and yet more stringent Tier 3 standards from the model years 2006 to

2008. (See 40 CFR §89.112). Also, the 1998 federal rules include a voluntary program called the "Blue Sky Series" engine program with the intent to encourage the production of advanced, very low-emitting engines. Under this program, manufacturers can obtain credits toward the manufacturing requirements in the 1998 federal rules by manufacturing these very low emitting engines. Under these new standards, EPA projects that emissions from new non-road, compression-ignition equipment will be further reduced by 60% for NO_x and 40% for PM compared to the emission levels of engines meeting the Tier 1 standards.

Texas's rules will require persons who own or operate non-road equipment powered by compression-ignition engines 50 hp and up within the four county DFW nonattainment area to meet the following requirements. For the portion of the fleet that is 50 hp up to 100 hp, the owner or operator must ensure that such equipment will consist of 100% Tier 2 non-road equipment by the end of the calendar year 2007. For the portion of the fleet that is 100 hp up to 750 hp, the owner or operator must ensure that such equipment consist of a minimum of 50% Tier 3 non-road equipment

and the remainder Tier 2 non-road equipment by the end of the calendar year 2007. Finally, for the portion of the fleet that is greater than 750 hp, the owner or operator must ensure that such equipment consist of 100% Tier 2 engines by the end of calendar year 2007. The requirements in the Texas rule can be met by retrofit of currently owned or newly purchased engines if the retrofits are certified by EPA to meet or exceed Tier 2 or Tier 3 standards. Equipment that does not meet these standards (or bring about equivalent emissions reductions) after the given time frame cannot be used in the four-county area. In addition, Texas has incorporated the "Blue Sky Series" into the State program, allowing credit for use of this class of engine.

The State rule will have the effect of accelerating the turnover rate of compression-ignition, engine- powered, non-road equipment. The DFW attainment demonstration shows that emissions reductions at this chosen rate of turnover are necessary for the area to reach attainment.

The Texas rule exempts non-road engines used in locomotives, underground mining equipment, marine application, aircraft, airport ground support equipment (GSE), equipment used solely for agricultural purposes, emergency equipment, and freezing weather equipment. Generally, the rules will affect diesel equipment 50 hp and larger used in construction, general industrial, lawn and garden, utility, and material handling applications.

An opportunity exists for an alternative means of complying with the Texas rules by developing, and submitting for approval, an emission reduction plan that would achieve equivalent emission reductions. This emissions reduction plan must be submitted by May 31, 2002, and approved by the Executive Director and EPA by May 31, 2003. If equipment subject to these rules is also subject to the Construction Equipment Operating Restrictions rules (discussed later in this TSD), the owner or operator can submit an alternate plan which shows how the owner/operator is going to reduce the NO_x emissions by a target amount equivalent to the total reductions achieved by both sets of rules. If the plan demonstrates that these reductions will occur by June

1, 2005, the reductions will be considered equivalent for purposes of timing. TNRCC will apply emissions inventory factors for equipment used in the modeling used in the development of these rules and relied upon for the attainment demonstration modeling, to quantify the emissions reductions that are projected to result from the fleet modifications under this rule. The State's phase-in schedule specified in these rules is set up so that compliance dates come after the implementation dates of the new federal standard as codified at 40 CFR 89.112.

The Texas rule would not require the use of any engines not already required under federal nonroad emission standards. Nor does it require fleet owners or manufacturers to change or modify the design of any engine. Rather, it requires accelerated turnover of older engines. It therefore appears to be best characterized as a restriction on the use of older engines, rather than a nonroad emission standard, which would be preempted under Clean Air Act section 209. Moreover, it allows alternative means of compliance by achieving equivalent emission reductions. It appears that this alternative could be met by reducing

emissions in any number of ways that would not be prohibited under section 209. The rule, therefore, appears to be consistent with section 209 of the Act regarding preemption of state standards and other requirements. See later discussion regarding the ground support equipment rule.

The Texas rules also require persons who own or operate subject non-road fleets to submit annual fleet reports. The rules also require owners and operators to maintain copies of the submitted reports for a minimum of three years. The date that the initial report is due is 2005.

The Texas rules exempt locomotives, underground mining equipment, aircraft engines, airport GSE, and agricultural equipment. Locomotives, underground mining equipment, marine engines, and aircraft engines are exempt from this rule because they are not regulated by the EPA non-road rule. Airport GSE is being regulated by another rule being adopted concurrently. Agricultural equipment is exempt from the rule because of its small contribution (less than

1.0%) to non-road emissions, and it is operated primarily in rural areas. Also, the State has an exemption for equipment used exclusively for emergency operations and for equipment used exclusively for freezing weather operations due to their low impact on air quality during the DFW ozone season.

Counties subject to the rule are the four nonattainment counties in the DFW CMSA (Collin, Dallas, Denton, and Tarrant).

3.) Non-Road Construction Equipment Restriction;

30 TAC Section 114 : §114.432 (Control Requirements), §114.436 (Recordkeeping Requirements), §114.437 (Exemptions), and §114.439 (Affected Counties and Compliance Dates)

The purpose of these rules is to establish a restriction on the use of construction equipment [non-road, heavy-duty diesel equipment rated at 50 horsepower (hp) and greater] as an air pollution control strategy to delay the emissions of NO_x, a key

ozone precursor, until later in the day, thus limiting ozone formation. This control strategy is necessary for the DFW nonattainment area to demonstrate attainment with the NAAQS for ozone. The 1996 construction equipment NO_x emission total for the four nonattainment counties in the Base 6a modeling inventory is now 50.6 tons/day. Federal controls on new construction equipment are in place and new controls for future engines were promulgated in 1998. 63 Fed. Reg. 56967 (Oct. 23, 1998).

The Texas rules implement an operating limitation requiring that construction equipment be restricted from use between the hours of 6:00 a.m. through 10:00 a.m., June 1 through October 31. The affected area includes the four-county DFW nonattainment area of Collin, Dallas, Denton, and Tarrant Counties. The effective date of the rules is June 1, 2005.

Ozone is formed through chemical reactions between natural and man-made emissions of VOC and NO_x in the presence of sunlight. Higher ozone levels occur most frequently on hot summer afternoons. The critical time for the mixing of NO_x and VOC is early in the day. By

delaying the hours of operation for construction equipment and delaying the release of NO_x emissions until after 10:00 a.m. during the ozone season (June 1 through October 31), the NO_x emissions will not mix in the atmosphere with other ozone-forming compounds until after the critical mixing time has passed. Therefore, production of ozone precursors will be stalled until later in the day when optimum ozone formation conditions no longer exist, ultimately reducing the peak level of ozone produced.

This strategy is not dependent on atmospheric conditions to reduce ozone formation. Instead, the strategy creates reductions in the amount of NO_x added to the atmosphere by construction equipment during the time of day when those emissions have been shown to contribute to exceedances of the ozone NAAQS.

This strategy does not create an actual reduction in emissions of NOx or VOC and does not require the use of additional control equipment or any new technology. This strategy is a restriction on use, rather than an emission standard or other requirement under Clean Air Act section 209(e)(2). It is therefore not preempted

under the Act. See Engine Manufacturers Ass'n v. EPA, 88 F. 3d 1075 (D.C. Cir 1996); 40 CFR Part 89, Appendix A to Subpart A.

Construction equipment is considered to be, but is not limited to, pavers, paving equipment, plate compactors, rollers, scrapers, surfacing equipment, signal boards/light plants, trenchers, bore/drill rigs, excavators, concrete/industrial saws, cement and mortar mixers, cranes, graders, off-highway trucks, crushing/processing equipment, rough terrain forklifts, rubber tire loaders, rubber tire tractors/dozers, tractors/loaders/backhoes, crawler tractors/dozers, skid steer loaders, off-highway tractors, and dumpsters/tenders.

The Texas rules require all companies or independent equipment operators subject to the provisions to maintain daily records of equipment operation in the affected counties.

Exemptions include construction equipment used exclusively for emergency operations to protect public health and the environment, and for mixing,

transporting, pouring, or processing wet concrete. Also, operators may submit an alternate emissions reduction plan by May 31, 2002, which is approved by the Executive Director and EPA by May 31, 2003. The alternate plan would allow operation during the restricted hours, provided the plan achieves reductions of NOx that would result in ozone benefits equivalent to the underlying regulation. *See*, 30 TAC § 114.437(b).

The affected counties include the four counties in the DFW nonattainment area (Collin, Dallas, Denton, and Tarrant).

4.) Electrification of Airport Ground Support Equipment (GSE)

3- TAC Chapter 114: §114.400 (Definitions), §114.402 (Control Requirements), §114.406 Reporting and Recordkeeping Requirements), and §114.409 (Affected Counties and Compliance Schedules).

These rules require a reduction in NOx of up to 90% from the 1996 baseline contributions attributable to airport ground support equipment (GSE). The reductions are to be phased-in according to the following schedule: 20% by December 31, 2003 or December 31 of

the year the airport becomes subject to the requirements; 50% by December 31, 2004 or by December 31 of the second year after the airport becomes subject; and 90% by December 31, 2005 or December 31 of the third year after the airport becomes subject to the requirements. Owners of GSE have the option of submitting a plan to the Executive Director of TNRCC which lists each GSE unit, each GSE unit's emission factor, total actual emissions attributable to GSE in 1996, and a plan for achieving the specified reductions. The Texas regulations allow flexibility in meeting the emission reduction requirements, including emission reduction measures applied to the GSE fleet or measures applied elsewhere in the nonattainment area so long as those measures satisfy the State banking regulations. Further, the regulations allow a GSE owner or operator to submit documentation of 100% electrification of GSE vehicles for which electrification technology exists. The adopted rules are necessary for the DFW nonattainment area to be able to demonstrate attainment with the ozone NAAQS.

GSE is comprised of a variety of vehicles and equipment that are necessary to service aircraft during ground-

based operations, including cargo loading and unloading, passenger loading and unloading, potable water storage, lavatory waste tank drainage, aircraft refueling, engine and fuselage examination, maintenance, and catering. Airlines and airports employ specially designed GSE to support all these operations. Electrical power and conditioned air are generally required throughout gate operation periods for both passenger and crew comfort and safety, and many times these services are also provided by GSE. GSE includes, but is not limited to, aircraft pushback tugs, baggage and cargo tugs, carts, forklifts, lifts, ground power units, air conditioning units, air start units, and belt loaders. Electric-powered versions of baggage tugs and belt loaders, which represent about a third of all GSE, are available and in use. Electric-powered versions of aircraft pushback tugs, air start units, air-conditioning units, forklifts, lifts, ground power units, and other specialty GSE are available as well.

The majority of GSE engines are “uncontrolled” from an emission perspective. A majority of GSE use engines that have not been designed for low emissions.

Therefore, GSE engines emit significant amounts of VOC and NO_x. A recent EPA study of four major airports in the United States indicated that GSE is responsible for 15-20% of airport-related NO_x and 10-15% of airport-related VOC.

GSE emissions for the DFW nonattainment area are projected to be reduced from 10.6 tons per day to 1.06 tons per day (tpd) of NO_x, in 2007. These rules will reduce the emissions from the source by 90%, thereby helping control ground-level ozone.

The rules include an exemption for general aviation operations, non-fixed winged aircraft operations, and military operations. A general aviation exemption was made due to the small population and activity level of general aviation GSE units. Non-fixed winged operations were exempted so that those places where rotorcraft land (e.g., hospitals, buildings, stadiums, etc.) would not be considered "subject airports." The military operations exemption was made for reasons of military preparedness. Additional exemptions are given for GSE that is only used during freezing weather because this equipment is only utilized during conditions which are

not conducive to ozone formation.

The responsibility for electrifying or otherwise reducing emissions for leased GSE is determined by the following: anyone who leases a unit of GSE for 12 months or longer will have that unit of GSE considered part of his/her fleet. If the unit is leased for less than 12 months, the unit is still considered part of the lessor's fleet.

The new rules require owners or operators of ground support equipment fleets located at airports in Collin, Dallas, Denton, and Tarrant Counties, and which experience more than or equal to 100 commercial air carrier operations per year, as averaged over a three-year period, to meet the requirements. This captures use of the GSE in the DFW ozone nonattainment area at the four largest commercial airports (DFW International, Dallas Love Field, Alliance, and Meacham).

The emission reduction plan mandated by these rules is required to be submitted to the commission by May 1, 2003. This plan must be approved by the Executive

Director of the Commission and the EPA and should be revised as needed to accurately reflect the compliance plan. Beginning December 31, 2004, owners and operators of GSE subject to these rules must demonstrate that their non-electric GSE units added to the fleet after December 31, 1996, or after the first year of being subject to the rule, are offset by 90%.

Negotiations are currently underway between the EPA, the United States Department of Transportation, and the GSE owners/operators for the establishment of a nationwide program to reduce air quality impacts from airports. Any enforceable agreement that is a result of these discussions and which reduces emissions prior to December 31, 2005 may be included in the required emission reduction plan.

Additionally, any GSE unit not available for purchase or conversion to electric power, an owner or operator of GSE may meet the requirements of this subsection if it can be shown that the lowest emitting equipment is being used, subject to approval by the Texas Natural Resources Conservation Commission's executive director and the EPA.

The rules require that owners or operators subject to these regulations submit annual GSE fleet reports to the executive director and maintain copies of the submitted reports for a minimum of three years. For convenience, the commission will permit these reports to be kept in hard-copy or electronic form.

It has been suggested that this measure is preempted by section 209 of the CAA. Section 209(e) prohibits States and their political subdivisions from adopting or enforcing any standard or other requirement relating to the control of emissions from non-road engines or non-road equipment.

On its own, the requirement to submit a plan that achieves a specified amount of emissions reductions is not an emissions standard or other requirement under section 209(e)(2). It is clearly not an ancillary enforcement provision, such as a certification or inspection provision. A general requirement that fleet operators achieve a specified level of NOx reductions is also not an emissions standard applicable to the non-road equipment. The fact that the level of required reductions is quantified and is calculated

based on the level of emissions generated in-use by the GSE fleet in a prior year does not change the conclusion that assigning a general emissions reductions obligation to a fleet operator does not amount to an emissions standard on non-road equipment. Similarly, the compliance alternatives available to a fleet operator do not transform the general obligation to achieve a certain quantity of reductions into an emissions standard on non-road equipment.

The first thing to note is that the fleet operator has several alternatives to show compliance with the reductions requirement. One alternative is to generate creditable emissions reductions elsewhere in the area. This is not an emissions standard on the non-road equipment itself. It is an alternative that encompasses emissions reductions generated from other sources, as long as the reductions meet certain criteria on creditability.

The second alternative allows a fleet operator to apply "emissions reductions measures" to the GSE fleet. This alternative provides the operator with the flexibility to employ a variety of measures to reduce emissions.

It does not mandate a quantified emissions level for the equipment itself, generated by changing or modifying the design of the equipment, which is the hallmark of an emissions standard. This compliance alternative would include measures that reduce emissions by restricting the use or operation of the equipment. This could include changes in their hours of operation as well as changes in the patterns of retiring and purchasing new equipment. While a fleet operator would have the option to modify or make changes to the design of their equipment to reduce emissions, this compliance alternative is not limited to this approach.

The third alterative allows the fleet operator to ensure that their fleet is 100% electric powered by a certain date.[1] This is achieved by either converting GSE equipment to electric power or purchasing electric powered GSE. A non-road engine is by definition powered by an internal combustion engine. CAA section 216(10). An electric powered GSE therefore would not

[1] The electric power provisions in 30 TAC section 114.402(g) states that "in lieu of compliance" with the reduction requirement, an operator may demonstrate that their fleet is 100% electric powered. Also, *see* fn. 7. While this is not technically a compliance alternative under section 114.402(d), for convenience it will be included in the term compliance alternative for purposes of this discussion.

be considered non-road equipment. This alternative therefore amounts to a fleet operator deciding to stop using non-road equipment, and instead either converting the non-road equipment to electric or purchasing electric GSE, such that the entire GSE fleet is no longer composed of non-road equipment. This compliance alternative arguably may be seen as completely ceasing the use and operation of non-road GSE equipment. As this compliance option is merely one of several available to fleet operators, we need not decide whether, standing on its own, this option would be consistent with Section 209(e).

The emissions reductions requirements on fleet operators therefore amount to a general obligation to obtain a specified amount of emissions reductions, with several alternatives available to the fleet operator. The alternatives for compliance do not transform the general obligation to obtain a specified level of emissions reductions into an emissions standards on the non-road equipment. The general obligation allows alternatives that are not preempted under section 209.

This conclusion would apply even if, assuming arguendo,

one or more of the compliance alternatives were deemed to be an emissions standard on non-road equipment. The general obligation to achieve emissions reductions, with several alternatives for compliance, does not itself require that non-road equipment meet an emissions standard, as long as there are viable alternatives for compliance that are not emissions standards on non-road equipment. Currently, the State is negotiating with airlines, and the local authorities that operate airports in nonattainment areas, to develop alternative, enforceable compliance methods for reducing ozone precursors. Southwest Airlines, Continental Airlines, and the City of Houston have signed agreements with the State, and other agreements in the DFW nonattainment area have been proposed. Specific actions in the agreements include consolidation of rental car operations and patron bussing to terminals, consolidation of employee parking lots and bussing operations, a pilot program for the use of fuel cell technology, retrofit and upgrade of onsite facilities' heating and cooling equipment, or other voluntary actions. These agreements are evidence that compliance with the regulations is possible.

Section 209(e) prohibits states from adopting and enforcing an emissions standard on non-road equipment. If a regulated party has valid alternatives for compliance that are not emissions standards, then the state is requiring a choice among alternatives, and is not enforcing an emissions standard. Even if an option available to a fleet operator would call for modifying the design of the equipment to reduce emissions to specified levels, the fleet operator is not required to take that option. Enforcing a choice among valid alternatives, at least some of which are not emissions standards, does not amount to enforcing a mandatory emissions standard.

On its face, the GSE regulations adopted by TNRCC appear to provide several such valid alternatives that are not emissions standards on the equipment. It follows that the regulations are not emissions standards or other requirements on non-road equipment, and are therefore not preempted under section 209(e) of the Act.

Conclusions

1.) **Non-Road Large Spark-Ignition Engines**

It is recommended that EPA approve these rules as a revision to Texas SIP. Although emissions from non-road, LSI engines have not yet been regulated by EPA, the California Air Resources Board (CARB) has adopted exhaust emission standards for these engines. Texas developed a non-road LSI engine strategy in the DFW area which establishes emission requirements for non-road, LSI engines 25 hp and larger for model year 2004 and subsequent engines, and all equipment and vehicles that use such engines, by requiring LSI engines to be meet emission limits, and be certified, as they are under 13 California Code of Regulations 9. Section 209 (e)(2)(B) of the Act states that any State other than California which has plan provisions approved under part D of Title I may adopt and enforce, after notice to EPA, California standards for controlling emissions from vehicles or engines. (See also 40 CFR 89, appendix A to subpart A).

The CARB has determined these standards to be a technologically feasible and cost effective strategy, at $.25 per pound ($500 per ton) of NO_x and hydrocarbons (HC) reduced, towards reducing NO_x and VOC

from these engines. VOC, and NO_x are precursor chemicals that contribute to the production of ground-level ozone. Adopting the California standards for non-road, LSI engines in the nine counties will reduce the amount of VOC and NO_x emissions from these sources, and therefore, help control ground-level ozone in the DFW nonattainment area. Emission reductions of NO_x from these affected engines are projected to be 2.2 tons per day.

2.) **Accelerated Purchase of Tier2/Tier3 Non-Road Compressed-Ignition Equipment**

It is recommended that EPA approve these regulations as a revision to Texas SIP. On October 23, 1998 EPA adopted, and codified in 40 CFR part 89, more stringent emission standards for NO_x, VOC's, and particulate matter (PM) for new non-road, compression-ignition engines, to be phased in over several years beginning in model year 1999. These requirements have been adopted by Texas, and their schedule meets the schedules found in 40 CFR § 89.112.

These rules will require that Tier 2 and Tier 3

equipment be purchased at an accelerated rate once they become available under the EPA schedule outlined in 40 CFR Part 89.

3.) **Non-Road Construction Equipment Restriction**

It is recommended that EPA approve these rules as a revision to the Texas SIP. While these rules bring about no direct emission reductions, they will delay the production of one of ozone's pre-cursors (NOx) until later in day, when it is less likely to react to form ozone. This will have the effect of reducing ozone pollution.

Appendix A to subpart A of 40 CFR 89 states that, in EPA's opinion, States are not precluded under Section 209 of the CAA from regulating the use and operation of on non-road engines, such as the regulations on hours of usage, daily mass emission limits, or sulfur limits on fuel, etc.

4.) **Electrification of Ground Support Equipment.**

It is recommended that EPA approve these regulations as

a revision to the Texas SIP. These rules require a plan to reduce NOx emissions attributable to airport GSE by 90% from GSE at the airports which have the most air carrier operations in Collin, Dallas, Denton, and Tarrant Counties. Owners and operators of GSE will either meet the emission reduction goal of 90% by application of any measure to be approved by TNRCC and EPA or electrify 100% of the GSE fleet for which electric technology exists. The reductions are to be phased-in over time and be complete by December 31, 2005, or three years after the airport becomes subject to the regulations. The adopted rules are necessary for the DFW nonattainment area to be able to demonstrate attainment with the ozone NAAQS.

In addition, appendix A to subpart A of 40 CFR part 89 states that, in EPA's opinion, States are not precluded under Section 209 of the CAA from regulating the use and operation of on non-road engines, such as the regulations on hours of usage, daily mass emission limits, or sulfur limits on fuel, etc.